

REMARKS

I. Introduction

By the present Amendment, claim 4 has been amended. No claims have been added or canceled. Accordingly, claims 4 and 5 remain pending in the application. Claim 4 is independent.

II. Office Action Summary

In the Office Action of July 20, 2005, claim 4 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,643,082 issued to Belser. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Belser in view of U.S. Patent No. 6,704,156 issued to Baker, et al. ("Baker"). These rejections are respectfully traversed.

III. Rejections Under 35 USC §102

Claim 4 was rejected under 35 U.S.C. § 102(e) as being anticipated by Belser. Regarding this rejection, the Office Action indicates that Belser discloses a servo pattern recording method for a disc apparatus having a magnetic disk for recording information thereon, a head having a write element for use in recording information onto said magnetic disk and a read element for reproducing information from said magnetic disk, and an actuator for moving the head to a desired radio position on said magnetic disk. The Office Action alleges that the disk apparatus of Belser performs various steps recited in independent claim 4, such as recording a servo pattern for positioning the head on a recording surface of the magnetic disk, recording marker patterns for detecting passage of time of the head in a front and a rear of the burst pattern for detecting a radio position of the head on a track in a

circumferential direction on the servo pattern recorded on the magnetic disk, and conducting a self servo write operation by the magnetic disk apparatus using the servo pattern. In particular, the Office Action alleges that Belser discloses measuring a distance between two servo patterns neighboring each other and adjusting a timing of writing when recording a new servo pattern while conducting the self-servo write operation. Applicants respectfully disagree.

As amended, independent claim 4 defines a servo pattern recording method for a magnetic disk apparatus that comprises the steps of:

recording a servo pattern for positioning of said head on a recording surface of said magnetic disk;

recording marker patterns for detecting passage time of said head, disposing in a front and a rear of a burst pattern for detecting a radial position of said head, respectively, on a track in a circumferential direction, on said servo pattern recoded on the recording surface of said magnetic disk; and

conducting a self servo write operation by said magnetic disk apparatus using said servo pattern;

wherein a distance is measured, in the circumferential direction, between two neighboring servo patterns which are recorded on the recording surface of said magnetic disk, and a time period for recording a new servo pattern is adjusted based on the measured distance, when conducting said self servo write operation.

According to independent claim 4, a servo pattern is recorded for positioning the head on a recording surface of the magnetic disk. Marker patterns are recorded for protecting the passage of time of the head and disposed in a front and rear of a burst pattern for detecting a radial position of the head on a track in a circumferential direction of the servo pattern. Next, a self servo write operation is conducted by the magnetic disk apparatus using the servo pattern. A distance is then measured in the circumferential direction between two neighboring servo patterns that are recording on the recording surface of the magnetic disk. A time period for recording a new

circumferential direction on the servo pattern recorded on the magnetic disk, and conducting a self servo write operation by the magnetic disk apparatus using the servo pattern. In particular, the Office Action alleges that Belser discloses measuring a distance between two servo patterns neighboring each other and adjusting a timing of writing when recording a new servo pattern while conducting the self-servo write operation. Applicants respectfully disagree.

As amended, independent claim 4 defines a servo pattern recording method for a magnetic disk apparatus that comprises the steps of:

- recording a servo pattern for positioning of said head on a recording surface of said magnetic disk;
- recording marker patterns for detecting passage time of said head, disposing in a front and a rear of a burst pattern for detecting a radial position of said head, respectively, on a track in a circumferential direction, on said servo pattern recoded on the recording surface of said magnetic disk; and
- conducting a self servo write operation by said magnetic disk apparatus using said servo pattern;

wherein a distance is measured, in the circumferential direction, between two neighboring servo patterns which are recorded on the recording surface of said magnetic disk, and wherein a time period for recording a new servo pattern is adjusted based on the measured distance, when conducting said self servo write operation.

According to independent claim 4, a servo pattern is recorded for positioning the head on a recording surface of the magnetic disk. Marker patterns are recorded for protecting the passage of time of the head and disposed in a front and rear of a burst pattern for detecting a radial position of the head on a track in a circumferential direction of the servo pattern. Next, a self servo write operation is conducted by the magnetic disk apparatus using the servo pattern. A distance is then measured in the circumferential direction between two neighboring servo patterns that are recording on the recording surface of the magnetic disk. A time period for recording a new

servo pattern is subsequently adjusted, based on the measured distance, while conducting the self servo write operation.

The Office Action alleges that Belser discloses the features of independent claim 4 and, in particular, measurement of a distance between two neighboring servo patterns and adjustment of a time period for recording a new servo pattern.

Reference is directed to column 8, lines 53 to 65 of Belser. Applicants' review of the cited passage has not revealed any disclosure or suggestion for these particular features. Belser discloses a servo sector format method for patterned media such as a magnetic media. The passage cited in the Office Action describes a portion of a flow chart for an initialization procedure for a servo sector format. See column 8, lines 4-6. As part of this initialization procedure, the read and write heads are loaded on the disc surface at the outer diameter and moved to the inner diameter. Current is applied in order to magnetize the media and erase it completely and uniformly.

See lines 42 – 46. The distance referenced in the Office Action does not relate to the distance between two neighboring servo patterns. Rather, this particular distance relates to a measurement of the reader to writer offset between the reader and the writer of the recording head. As discussed in Belser, a start window can be adjusted to trigger the second patterned servo timing mark. This procedure simply does not compare the distance between two neighboring servo patterns because no servo patterns have been written. Additionally, Belser does not appear to provide any disclosure or suggestion for measuring the distance between two neighboring servo patterns, as specifically recited in independent claim 4. Further, the time period for recording a new servo pattern cannot be adjusted based on the measured distance because Belser does not measure such a distance. Belser simply fails to

disclose or suggest specific features in independent claim 4 such as, “wherein a distance is measured, in the circumferential direction, between two neighboring servo patterns which are recorded on the recording surface of said magnetic disk, and wherein a time period for recording a new servo pattern is adjusted based on the measured distance, when conducting said self servo write operation.” (Emphasis added)

It is therefore respectfully submitted that independent claim 4 is allowable over the art of record.

Claim 5 depends from independent claim 4, and is therefore believed allowable for at least the reasons set forth above with respect to independent claim 4. In addition claim 5 introduces novel elements that independently renders it patentable over the art of record.

IV. Rejections Under 35 USC §103

Claim 5 was further rejected under 35 U.S.C. § 103(a) as being unpatentable over Belser in view of Baker. Regarding this rejection, the Office Action relies on Belser for allegedly disclosing the features set forth in independent claim 4 of the claimed invention. The Office Action admits that Belser fails to explicitly disclose the features recited in claim 5. However, reliance is placed upon Baker for disclosing such features.

As discussed above with respect to independent claim 4, Belser clearly fails to disclose or suggest various features recited in independent claim 4, such as measuring the distance between two neighboring servo patterns. Additionally, the inclusion of Baker does not remedy this failure to disclose the features recited in independent claim 4. The passage (from Baker) cited in the Office Action is also not

concerned with the actual servo patterns. Rather, the passage appears to discuss the burst patterns that are disposed while shifting or offsetting the head by one half of the track width. Accordingly, the combination of Belser and Baker still fails to disclose, or even suggest, all of the features recited in claim 5, as required for a proper 103 rejection.

It is therefore respectfully submitted that claim 5 is further allowable over the art of record.

V. Conclusion

For the reasons stated above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, a Notice of Allowance is believed in order, and courteously solicited.


If the Examiner believes that there are any matters which can be resolved by way of either a personal or telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

AUTHORIZATION

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.43197X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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